Author Index

Acker, Robert F., 152
Alexander, Martin, 135
Alg, Robert, 173
Anderson, H., 64
Arnaudi, C., 274
Arnow, Peter, 125

Bajaj, Violot, 303
Barghoorn, Elso S., 5
Barton, Richard R., 264
Baugh, W. D., 9
Bell, H., 119
Bell, T. A., 296
Beneke, E. S., 253
Bennett, E. O., 368
Biffi, G., 288
Bird, H. L., Jr., 326
Blumer, T. N., 300
Bohonos, Nestor, 125
Bollen, Walter B., 349
Boretti, G., 288
Boruff, C. S., 14
Brown, W. T., 235
Brumwell, Charles A., 130
Bucek, Wesley, 183
Buettner, L. G., 26
Buswell, A. M., 21

Cameron, George M., 85
Card, Bradley J., 45
Carlo, Robert M., 264
Carroll, E. J., 205
Citek, Francis J., 33
Clark, D. S., 344
Claydon, T. J., 221
Cole, Everett J., 198
Conner, H. A., 9
Cortelyou, J. R., 227, 269
Corum, C. J., 326
Costilow, R. N., 296, 300

Damle, S. P., 303
David, J. J., 344
Day, W. H., 14
Deatherage, F. E., 88
Decker, Herbert M., 33, 148, 267
Del Guidice, V. J., 177
Demain, A. L., 296
Di Marco, A., 288
Dulaney, Eugene L., 371
Dworschack, Robert G., 190

Elliott, R. Paul, 158
Engelhard, W. E., 140
Etchells, J. L., 296, 300
Evans, James B., 26

Fabian, F. W., 107, 253
Fields, Adelaide, 382
Fletcher, Donald W., 349
Flett, Lawrence H., 100
Foster, John W., 385
Frank, Milton A., Sr., 173
Friedl, J. L., 360

Gainor, C., 95, 97
Georgi, Carl E., 355
Gillies, R. A., 330
Goldsmith, M. T., 360
Golueke, Clarence G., 45
Gorfien, Harold, 264
Graber, C. D., 380
Graikoski, J. T., 330
Gray, P. H. H., 37
Greene, V. W., 110
Greenfield, R. B., Jr., 199
Gross, Noel H., 33
Guiteras, Albert F., 100

Halvorson, H. O., 285
Hamdy, M. K., 143
Harned, R. L., 365
Harstad, J. Bruce, 33, 148
Haynes, William C., 339
Hedrick, L. R., 259
Hendlin, David, 294
Hollander, David H., 164
Humfeld, H., 170
Humphreys, T. W., 1
Hungate, R. E., 205

Ino, James, 380

Jackson, Richard W., 190
Jezeski, J. J., 110
Johns, C. K., 1
Johnson, Marvin J., 41
Joslyn, M. A., 70, 79

Kempe, Lloyd L., 330
Kheshgi, Saeed, 183
Kingsbury, John M., 5
Kravitz, E., 119
Krishnan, P. S., 303
Kuehne, Ralph W., 339
Kunkle, L. E., 88

Lagoda, Adolph A., 190
Lakata, George D., 2
Latlief, M. A., 360
Lawrence, Norman, 21
Lechevalier, Hubert, 152
Leone, F. A., 259
Levine, Leo, 262
Lincoln, A. F., 380
Long, R. A., 240

MacLeod, Robert A., 130
McCall, Keith B., 355
McDaniel, L. E., 240
McGauhey, P. H., 45
McWhinnie, M. A., 227, 269
Miller, William S., 173
Mills, Doris E., 9
Morris, Walter, 282

Author Index

Acker, Robert F., 152
Alexander, Martin, 135
Alg, Robert, 173
Anderson, H., 64
Arnaudi, C., 274
Arnow, Peter, 125

Bajaj, Violot, 303
Barghoorn, Elso S., 5
Barton, Richard R., 264
Baugh, W. D., 9
Bell, H., 119
Bell, T. A., 296
Beneke, E. S., 253
Bennett, E. O., 368
Biffi, G., 288
Bird, H. L., Jr., 326
Blumer, T. N., 300
Bohonos, Nestor, 125
Bollen, Walter B., 349
Boretti, G., 288
Boruff, C. S., 14
Brown, W. T., 235
Brumwell, Charles A., 130
Bucek, Wesley, 183
Buettner, L. G., 26
Buswell, A. M., 21

Cameron, George M., 85
Card, Bradley J., 45
Carlo, Robert M., 264
Carroll, E. J., 205
Citek, Francis J., 33
Clark, D. S., 344
Claydon, T. J., 221
Cole, Everett J., 198
Conner, H. A., 9
Cortelyou, J. R., 227, 269
Corum, C. J., 326
Costilow, R. N., 296, 300

Damle, S. P., 303
David, J. J., 344
Day, W. H., 14
Deatherage, F. E., 88
Decker, Herbert M., 33, 148, 267
Del Guidice, V. J., 177
Demain, A. L., 296
Di Marco, A., 288
Dulaney, Eugene L., 371
Dworschack, Robert G., 190

Elliott, R. Paul, 158
Engelhard, W. E., 140
Etchells, J. L., 296, 300
Evans, James B., 26

Fabian, F. W., 107, 253
Fields, Adelaide, 382
Fletcher, Donald W., 349
Flett, Lawrence H., 100
Foster, John W., 385
Frank, Milton A., Sr., 173
Friedl, J. L., 360

Gainor, C., 95, 97
Georgi, Carl E., 355
Gillies, R. A., 330
Goldsmith, M. T., 360
Golueke, Clarence G., 45
Gorfien, Harold, 264
Graber, C. D., 380
Graikoski, J. T., 330
Gray, P. H. H., 37
Greene, V. W., 110
Greenfield, R. B., Jr., 199
Gross, Noel H., 33
Guiteras, Albert F., 100

Halvorson, H. O., 285
Hamdy, M. K., 143
Harned, R. L., 365
Harstad, J. Bruce, 33, 148
Haynes, William C., 339
Hedrick, L. R., 259
Hendlin, David, 294
Hollander, David H., 164
Humfeld, H., 170
Humphreys, T. W., 1
Hungate, R. E., 205

Ino, James, 380

Jackson, Richard W., 190
Jezeski, J. J., 110
Johns, C. K., 1
Johnson, Marvin J., 41
Joslyn, M. A., 70, 79

Kempe, Lloyd L., 330
Kheshgi, Saeed, 183
Kingsbury, John M., 5
Kravitz, E., 119
Krishnan, P. S., 303
Kuehne, Ralph W., 339
Kunkle, L. E., 88

Lagoda, Adolph A., 190
Lakata, George D., 2
Latlief, M. A., 360
Lawrence, Norman, 21
Lechevalier, Hubert, 152
Leone, F. A., 259
Levine, Leo, 262
Lincoln, A. F., 380
Long, R. A., 240

MacLeod, Robert A., 130
McCall, Keith B., 355
McDaniel, L. E., 240
McGauhey, P. H., 45
McWhinnie, M. A., 227, 269
Miller, William S., 173
Mills, Doris E., 9
Morris, Walter, 282

Nell, I Ellen, 164
Nelson F. E., 243, 250
Nickle Margaret I., 117
Niven C. F., Jr., 26

O'Brie E., 199
Oleson J. J., 125

Parm e, C. E., 243, 250
Penne , P., 288
Perln , D., 199
Piepo Carl R., 53
Piper Frank J., 33
Pivni , Hilliard, 107, 140
Prues Louis, 125

Quast , J. H., 235
Quinn H., 202

Reitman, Morton, 173
Rhodes, Lenora J., 339
Richardson, J. H., 177
Riddiford, M. S., 227, 269
Roberts, Henry R., 183

Sánchez-Marroquín, A., 102
Scholefield, P. G., 235
Semrad, J. E., 227, 269
Serjak, W. C., 14
Shapiro, Rebecca L., 100
Sheets, W. D., 143
Sherrer, E. L., 143
Shiota, Tetsuo, 21
Shipe, E. L., Jr., 85
Shockman, Gerald D., 29
Simpf, Katherine, 371
Smith, Paul F., 294
Sneed, Thelma, 285
Snell, Neva, 174
Soltero, Fred V., 41
Stapley, E. O., 371
Stark, W. M., 326
Stedman, R. L., 119
Stone, Joseph L., 262
Stoudt, Thomas H., 385
Stuart, L. S., 360
Sugihara, T. F., 170
Szybalski, Waclaw, 57

Teunisson, Dorothea J., 215
Thompson, T. L., 140
Toennies, Gerrit, 29

Updegraff, D. M., 309
Updyke, Elaine L., 117
Usdin, Earl, 29

Van Lanen, J. M., 14
Van Meter, Irene, 21
Voss, J. G., 202
Vosti, Donald C., 70, 79

Waldham, Donald G., 333
Wallace, R. H., 344
Weaver, R. H., 282
Wedum, A. G., 148
Wegemer, D. E., 95, 97
Weiser, H. H., 88, 143
Wheeler, H. O., 368
White, L. S., 253
Whitehouse, H. S., 202
Wiesman, C. K., 177
Wild, G. M., 326
Wilkowske, H. H., 243, 250
Williams, J. H., 125
Wilson, Myrl E., 267
Wilson, P. W., 135
Wolcott, Lawrence, 125
Wolford, E. R., 223
Wren, Gloria B., 309

Yurchenco, John A., 53
Yurchenco, Mary C., 53

Zapata, M., 102

Subject Index

Acetobacter suboxydans and production of 5-ketogluconic acid, 183
Acetoin production, sodium chloride versus phosphate in media for, 259
Acrolein, in distillery mashes, 9
  production by bacteria in distillery mashes, 14
Aerobacter cloacae, fats of, 285
Air-borne microorganisms, slit sampler for collecting, 267
Air conditioners and ultraviolet irradiation, 148
Air sterilization, testing filtering materials for, 240
Alcaligenes viscosus variant causing ropiness in milk, 95, 97
Aldrin, effect on soil microorganisms, 349
Algae culture in carboys and deep-tank fermentors, 125
Anaerobic bacterial spores, in canned meat, gamma ray sterilization of, 330
Antibiotics in meat processing, 88
Antimicrobial drugs, cross resistance to, 57
Apparatus for controlled submerged fermentation, 2
Apple juice, factors in fermentation of, 344
Aspergillus niger, growth from spore inoculum, 303
Assay procedure, microbiological synthesis of ergosterol, 385
Autolysis, of bakers' yeast, 70
  of pure culture yeasts, 79
Azotobacter, mass production for enzymes, 135

Bacillus megaterium, cross resistance to antimicrobial drugs, 57
Bacteria, maintaining stable infectious, 53
  preservation by freezing with glycerol, 164
  removal by ultraviolet irradiation in air conditioners, 148
  sulfate-reducing, release of oil by, 309
  survival in cutting oils, 368
  water-borne, ultraviolet irradiation of, 227, 269
Bacterial, contamination of dishes determined by quantitative method, 100
  contamination of tableware determined by direct plating, 264
  endospores, vapor pressure and moisture content of, 333
  pathogens in soluble oil emulsions, 140
  spores, gamma ray sterilization of, in canned meat, 330
Bacteriophage, heat inactivation of, active against lactic streptococci, 250
Bacteriophages, serological classification of, active against lactic streptococci, 243
Bakers' yeast, autolysis of, 70
Benzenehexachloride, effects on soil microorganisms, 37
  experiments with heterotrophic bacteria, 37
Bioautography of tetrazolium, 29
Blendor, modifications of high-speed safety, 173
B.O.D. test, Nitrosomonas and nitrification phase of, 21
Boric acid and lactose broths, comparison of, for isolation of *Escherichia coli*, 223
Bovine rumen, microbial fermentation in, 205
2,3-Butanediol, production by fermentation of sugar beet molasses, 355

Candicidin production with *Streptomyces griseus* 3570, 152
Canned meat, gamma ray sterilization of, 330
Cellulose digestion and fishery by-products, 130
  by rumen microorganisms, 130
Chlorine, adsorption of, by cotton and wool, 360
Chlortetracycline production in liquid culture, 288
Citrus products, isolation of *Escherichia coli* on boric acid and lactose broths, 223
Coliform bacteria in soluble oil emulsions, 107
  determinations by the membrane filter and MPN methods, 85
Composting, evaluation of inoculums in, 45
Continuous feeding of glucose and penicillin-producing cultures, 41
Copper sulfate and molecular filtration technique for enumeration of *Escherichia coli*, 382
Cotton, adsorption of chlorine and quaternary by, 360
Cross resistance, microbial, to toxic agents, 57
Cured meat, thermal tolerance of Lactobacilli causing greening of, 26
Cylinder-plate assays, organic solvents in, 174

Degeneration of *Streptomyces griseus* mutant, 199
Deterioration of milk in summer and winter, 221
Dishes, quantitative method for determining bacterial contamination of, 100
Disinfectants, adsorption of chlorine and quaternary by cotton and wool, 360
Disinfectants, for inanimate objects, 119
  use of, on inanimate objects, 322
Distillery mashes, acrolein production by bacteria, 14
  formation of acrolein in, 9

Eggs, spoilage of shell, by pseudomonads, 158
Enzymes, mass production by Azotobacter, 135
Ergosterol, microbiological synthesis of, and assay procedure, 385
  production by yeasts, 371
Escherichia coli, isolation of in boric acid and lactose broths, 223
  molecular filtration technique, 382

Fats of *Aerobacter cloacae*, 285
Fermentation, apparatus for controlled submerged, 2
  production of 2,3-butanediol from sugar beet molasses by, 355
Fermentor for small-scale fermentations, 190
Filtering materials, testing of, for air sterilization, 240
Fish, reddening of salted, 64
Fishery by-products and cellulose digestion, 130
Freezing of bacteria with glycerol, 164
Fungi, pectolytic activity of, from strawberries, 253
Fungicides, use of, in sawdust, 177

Gamma ray sterilization of canned meat, 330
Genetic studies on microbial cross resistance, 57
Germicidal ultraviolet irradiation, physical factors affecting, 227, 269
Germicides, improvements in evaluation of Weber and Black Method, 1
Glucose and penicillin-producing cultures, 41
Glycerol, freezing of bacteria with, 164

Heat inactivation of bacteriophage active against lactic streptococci, 250
Heterofermentative Lactobacilli, thermal tolerance studies on, of cured meat, 26
Heterotrophic bacteria, effects of benzenehexachloride on, 37
Hexachlorocyclopentadiene in treatment of sewage, 195
Hides, reddening of salted, 64

Inanimate objects, efficiencies of disinfectants for use on, 322
In vivo evaluation of skin sanitizing soaps, 202

5-Ketogluconic acid, production by *Acetobacter suboxydans*, 183

Lactic streptococci, heat inactivation of bacteriophage active against, 250
serological classification of bacteriophages active against, 243
Lactobacilli, thermal tolerance studies on heterofermentative, 26
Lactose and boric acid broths, comparison of, for isolation of *Escherichia coli*, 223

Mass culture, of algae, 125
of the Azotobacter for enzymes, 135
Meat brines, yeasts from commercial, 300
processing, antibiotics in, 88
Media, acetoin production, sodium chloride versus phosphate in, 259
Medium, chemically defined, submerged cultures of *Streptomyces erythreus* in, 326
Membrane filter and MPN method for coliform determinations, 85
Mercapto compounds on soil nitrification, 235
Metabolic behavior of *Streptomyces aureofaciens* in liquid culture, 288
Microbial, cross resistance to antimicrobial drugs, 57
fermentation in bovine rumen, 205
Microbiological, degradation of sterols, 274
factors and phenolic wastes, 143
synthesis of ergosterol, assay procedure, 385
Micrococcus pyogenes, effect of potassium on, 339
Microorganisms, slit sampler for collecting air-borne, 267
Milk, deterioration of inoculated, in summer and winter, 221
psychrophilic bacterium causing ropiness in, 95, 97
Moisture content and bacterial endospores, 333
Molasses, sugar beet, production of 2,3-butanediol by fermentation of, 355
Mold control during isolation of yeasts, 296
Molecular filtration technique, enumeration of *Escherichia coli* with zinc or copper sulfate, 382
Mushroom mycelium, submerged culturing of, 170

Nitrosomonas in the B.O.D. test, 21

Oil, emulsions, coliform bacteria in soluble, 107
release, by sulfate-reducing bacteria, 309
Oils, survival of bacteria in cutting, 368

Pectolytic activity of fungi from strawberries, 253
Penicillin-producing cultures, continuous addition of glucose to, 41
Performance test method of disinfectants, 119
Petroleum-bearing materials, oil release by sulfate-reducing bacteria from, 309
Phase recovery, rapid method for, in Salmonella cultures, 380
Phenolic wastes and microbiological factors, 143
Phenylacetylcarbinol synthesis by yeast, 294
Phosphate versus sodium chloride in media for acetoin production, 259
Plating, bacteria on tableware by direct, 264
Pollution, streptococci as indices of, in well waters, 282
Potassium, effect upon growth of *Micrococcus pyogenes*, 339
Preservation of bacteria by freezing with glycerol, 164
Prodigiosin by submerged growth of *Serratia marcescens*, 365
Proteins, elimination of native, in tetanus toxoid production 262
Pseudomonads in spoilage of shell eggs, 158
Psychrophilic, bacteria of dairy origin, influence of temperature on development, 110
bacterium causing ropiness in milk, 95, 97

Quantitative method, bacterial contamination of dishes determined by, 100
Quaternary, adsorption of, by cotton and wool, 360

Reddening of salted hides and fish, 64
Red-pigmenting organisms of salted hides and fish, 64
Rice, yeasts from stored rough, 215
Rumen, microbial fermentation in bovine, 205
microorganisms and cellulose digestion, 130

Salmonella cultures, rapid method for phase recovery of, 380
Sawdust, hazards of spores in, 177
Serological, classification of bacteriophages active against lactic streptococci, 243
typing of Group A streptococci, dehydrated medium vs. fresh T-H broth, 117
Serratia marcescens, production of prodigiosin by submerged growth, 368
Sewage, treatment with hexachlorocyclopentadiene, 198
Silica gel as a microbiological medium, 5
Slit sampler for collecting air-borne microorganisms, 267
Soaps, *in vivo* evaluation of skin sanitizing, 202
Sodium chloride versus phosphate in media for acetoin production, 259
Soil, fertility, activities of soil microorganisms and, 349
microorganisms, effect of Aldrin on, 349
nitrification, effects of mercapto compounds on, 235
Soluble oil emulsions, pathogenic bacteria in, 140
Solvents, organic in cylinder-plate assays, 174
Spore inoculum, growth of *Aspergillus niger* from, 303
Spores in floor coverings, sawdust, 177
Sterilization of spores, time temperature studies of, 33
Sterols, microbiological degradation of, 274
Storage of infectious bacterial pools, 53
Strawberries, pectolytic activity of fungi from, 253
Streptococci, as indices of pollution in well waters, 282
type specific Group A, dehydrated medium vs. fresh T-H broth, 117
Streptomyces aureofaciens in liquid culture, 288
Streptomyces coelicolor pigment, 102
Streptomyces erythreus, biochemical changes in submerged cultures of, 326
Streptomyces griseus 3570, growth and candicidin production, 152
mutant, degeneration of, 199
Submerged, cultures, biochemical changes of *Streptomyces erythreus* in, 326
culture of mushroom species, 170
fermentations, fermentor for, 190
growth of *Serratia marcescens* and production of prodigiosin, 368
Sugar beet molasses, production of 2,3-butanediol by, fermentation of, 355
Sulfate reducing bacteria, release of oil by, 309

Tableware, bacteria by direct plating of, 264
Temperature, low, in storage of infectious bacterial pools, 53
Tetanus toxoid production, elimination of native proteins in, 262

Tetrazolium bioautography, 29
Time temperature studies of spores in an electric air sterilizer, 33
Treponema pallidum, preservation by freezing with glycerol, 164

Ultraviolet irradiation, in air conditioners, 148
of water-borne bacteria, 227, 269

Vapor pressure and bacterial endospores, 333
Virulence, maintaining of, in infectious bacterial pools, 53

Water-borne microorganisms, ultraviolet irradiation on, 227, 269
Weber and Black Method, improvements in, 1
Well waters, streptococci as indices of pollution in, 28
Wool, adsorption of chlorine and quaternary by, 360

Yeast, autolysis of bakers', 70
autolysis of pure culture, 79
ergosterol production by, 371
from commercial meat brines, 300
from stored rough rice, 215
mold control during isolation of, 296
phenylacetylcarbinol synthesis by, 294

Zinc and molecular filtration technique for enumeration of *Escherichia coli*, 382